

FINAL AGREEMENT IN PRINCIPLE BATTLE CREEK SALMON AND STEELHEAD RESTORATION PROJECT	
Feature	1/26/99 Consensus Proposal, subject to PG&E Management Approval, FERC license amendment, and Resource Agency/PG&E MOU Supporting All Facility and Instream Flow Changes Outlined Below

Facilities	Decommission Wildcat, Coleman, Soap Creek, Lower Ripley and South Diversion Dams and associated water conveyance facilities that will no longer be in service; screen and ladder N. Battle Creek Feeder, Inskip and Eagle Canyon Diversion Dams; install tailrace connectors and water bypass facilities at Inskip and South Powerhouses. PG&E, or its successor(s) (Project Owner) agrees to support installation of the connector at South Powerhouse concurrent with, or prior to, the Inskip Diversion Dam Fish Screen.
Flows	See attached Tables 1 and 2 which list "Prescribed Instream Flow Releases." The Resource Agencies will meet and confer with Project Owner before determining flow ramping provisions for returning facilities to service following shutdowns.
Economic Variables	Adopt 12/98 CEC energy forecast & revise discount rate to 9.17%. Include all costs of proposal: O&M impacts, license amendment, all study costs associated with decommissioning, Facility Monitoring ¹ and Biological/Environmental Monitoring ² , a \$3 million Water Acquisition Fund, and a \$3 million Adaptive Management Fund (See Table 3 "Total Project Cost" and Table 4 "Summary of Assumptions").
Water Acquisition Fund Protocol	Water Acquisition Fund administered by Resource Agencies following consultation with appropriate interested parties. Water Acquisition Fund shall be placed in an escrow account and used solely for purposes of purchasing additional flows if the Resource Agencies determine such flows are necessary during the first 10 years of initiation of instream flow changes listed in Tables 1 and 2. During this first ten year period, payment to the Project Owner for agreed-upon instream flow changes will be made annually. After the first January 1 st following the expiration of the first 10 years of instream flow changes listed in Tables 1 and 2, all uncommitted funds would revert to CALFED; funds for instream flow changes agreed upon before the subject January 1 st which remain in effect after the subject January 1 st will be paid to the Project Owner in one lump-sum payment based on the net present value of foregone energy for the period inclusive of the realized increased flows and expiration date of the current FERC license. Protocols to determine appropriate flow changes for anadromous fish to be funded with the \$3 million Water Acquisition Fund will be developed in which both Resource Agencies and Project Owner make the determination through a consensus process. If consensus is not achieved, Project Owner and Resource Agencies (collectively) will each choose a person, and together those two persons will choose a single third party who will act as mediator. Each party shall make its choice within 14 days from the date of any determination that consensus has not been achieved, and the third party mediator shall be chosen by those parties no later than 45 days from such date of determination that consensus has not been achieved. These times may be extended by mutual agreement of the Resource Agencies and Project Owner. If consensus through mediation is still not achieved, the Resource Agencies and Project Owner reserve their right to petition FERC to resolve the subject action. Resource Agencies and Project Owner will be responsible for assuming their respective costs for FERC process. Interim flows will be provided by Project Owner until there is either consensus or FERC approval of the additional flows determined to be necessary by Resource Agencies. Water Acquisition Funds shall be used to implement consensually-agreed to or the FERC-approved actions, and interim actions which have been taken pending FERC action.

¹ FACILITY MONITORING includes verification that agreed-upon instream flows including ramping limitations are met, verify and document fish screen and ladder facilities continue to function as designed, i.e., report to FERC of screen and ladder outages, alarms, reasons for operational deviations, verify no gaps exceeding design criteria exist in the fish screen structure, perform periodic inspections to verify screen is being properly maintained and site conditions have not significantly changed, having the Owner's operator note any fish stacking below the fish ladders and fish passing up the ladder.

² BIOLOGICAL/ENVIRONMENTAL MONITORING includes anadromous fish survey (i.e., abundance, distribution and timing of adult and juvenile fish), water quality/meteorology, barrier formation, long-term fish passage at fish passage facilities.

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Adaptive Management Fund Protocol	Adaptive Management Fund administered by Resource Agencies following consultation with appropriate interested parties ³ . Adaptive Management Fund shall be placed in an escrow account and used solely for Battle Creek salmon and steelhead restoration purposes directly associated with the facilities and operations of FERC Project No. 1121, i.e., instream flow changes (after exhaustion or termination of the Water Acquisition Fund), and facility modifications; all uncommitted funds will revert to the third party at the end of the current FERC license term. Protocols to determine appropriate actions that benefit anadromous fish to be funded with the \$3 million Adaptive Management Fund will be developed in which both Agencies and Project Owner make the determination through a consensus process. For funding instream flow changes, the protocol would be the same as for the Water Acquisition Fund discussed above. For funding facility modifications, the protocol would be the same as for the Water Acquisition Fund discussed above with 2 exceptions: 1) no interim actions would be implemented prior to FERC action; and 2) for all FERC resolved actions, the Adaptive Management Fund would contribute a maximum of 60 percent of any resulting facility modification cost. In other words, for actions related to facility modifications, funds from the Adaptive Management Fund shall be used to implement 100% of the costs of consensually-agreed to actions but only 60% of the costs of actions submitted to FERC for resolution, the remaining 40% to be borne by the Project Owner in the latter case.
Total Cost	\$50.7 million (includes \$1 million CALFED-funded monitoring; additional monitoring funding to be provided by others i.e., CVPIA, CAMP, etc.)
Payment to Project Owner	\$2.1 million
Resource Agency Cost Sharing	Public funding for: all screens, ladders, connectors, decommissioning, decommissioning studies, start-up and acceptance testing prior to transferring ownership and operations and maintenance responsibilities to Project Owner, construction and decommissioning over-runs, environmental permitting (i.e., all necessary environmental permitting (e.g., NEPA/CEQA), including additional FERC-required decommissioning studies), all Biological/environmental monitoring (except for Owner's limited participation and use of internal technical and fishery expertise to jointly develop Agencies' monitoring plan, assist in analyses, review results and identify potential adaptive management measures), and Water Acquisition Fund; 10% of Purchased Water Costs.
Resource Agency Contribution	\$27.2 million = 54%. Includes portion of Biological/Environmental Monitoring ² ; other governmental funding sources (CVPIA, CAMP) will be used for monitoring.
Third Party Cost Sharing	Third Party funding for \$3 million Adaptive Management Fund
Third Party	\$3 million = 6%

³ An Adaptive Management Plan will be developed to contribute to the sustainability of naturally spawned anadromous salmonids and the associated ecosystem of Battle Creek affected by FERC Project No. 1121 facilities or operations. The Adaptive Management Plan will be developed by consensus. The Adaptive Management Plan will develop a broadly applicable and flexible framework for an adaptive management program specific to impacts resulting from FERC Project No. 1121 facilities or operations and will include: establishing objectives; planning for unanticipated outcomes; recognizing appropriate time frames for resource management and recovery; defining the role of assessment monitoring; developing general procedures for prioritizing expenditures of Adaptive Management Funds; and developing general procedures for modifying management approaches using new scientific data. The Adaptive Management Plan will implement specific actions to protect, restore, enhance, and monitor salmonids and salmonid habitat, at FERC Project No. 1121, to guard against straying and to ensure that salmon and steelhead fully access and utilize available habitat in a manner that benefits all life stages and thereby maximizes natural production, fully utilizing ecosystem carrying capacity. The Adaptive Management Plan may also include measures to minimize impacts of Project operations upon life stages of salmon and steelhead.

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Contribution	
Project Owner Cost Sharing	Project Owner funding for: 90% of Purchased Water Costs; 100% of increased O&M, foregone power due to ramping rate requirements and periodic screen and ladder repairs, and replacements due to normal wear-and-tear and catastrophic damage. Screen and ladder modifications and replacements due to changes in design to improve biological effectiveness which meet NMFS adopted criteria will be paid from the Adaptive Management Fund; Facility Monitoring ¹ to verify flows are provided as agreed, and screens and ladders continue to function as designed. Project Owner pays all internal costs associated with FERC license amendment and Facility Monitoring ¹ (Biological/Environmental Monitoring ² including overall effectiveness of modifications, fish population and distribution monitoring which is beyond Project Owner Facility Monitoring ¹ requirements will be paid by CALFED. Owner shall participate in and provide limited internal technical and fishery expertise to the Agencies' Biological/Environmental Monitoring ² program at its own cost.)
Project Owner Contribution	\$20.6 million = 40% Includes limited portion of Biological/Environmental Monitoring ²
Assurances and Requirements (to be stipulated in MOU and provided through ESA permits and FERC license)	<p>Project Owner will voluntarily reopen its FERC license through the license amendment process to enhance the Battle Creek fishery as described in the MOU and related agreements. The Resource Agencies agree to: 1) support project owner's FERC license amendment to incorporate the restoration actions described herein into FERC License No. 1121, and 2) support the position that FERC focus this license amendment on the restoration actions described herein in order to streamline the process for a FERC decision to allow Battle Creek restoration to go forward in a timely manner.</p> <p>No ESA assurances.</p> <p>Water Acquisition Fund provided by CALFED and administered by Agencies to pay for any additional future flow changes for salmon and steelhead restoration purposes directly associated with the facilities and operations of FERC Project No. 1121 pursuant to the above-mentioned protocols.</p> <p>Adaptive Management Fund provided by Third Party and administered by Agencies to pay for any additional future salmon and steelhead restoration purposes directly associated with the facilities and operations of FERC Project No. 1121 pursuant to the above-mentioned protocols.</p> <p>Water diversion rights associated with all dams to be decommissioned will be transferred to the appropriate party (CDFG, NMFS, USFWS). Based on the assumption that all PG&E water rights on the South Fork of Battle Creek have an equal priority, water rights transferred to Agencies will not be used by the Agencies to increase bypass flows above the amounts specified in the MOU, or developed pursuant to the Adaptive Management Program. If FERC License No 1121 is abandoned, then the limitation regarding transferred water rights would no longer apply. Project Owner and the Resource Agencies, or their designee, will file a Petition with the SWRCB pursuant to Water Code 1707 to preserve and enhance instream flows. Project Owner and the Resource Agencies, or their designee, agrees to support such a petition.</p> <p>Water associated with meeting the prescribed flow schedules below all dams screened and laddered plus Baldwin Creek will be included in the FERC license amendment in order to maintain fish and wildlife resources. Additionally, Project Owner and the Resource Agencies will execute an agreement ensuring that the currently agreed-upon bypass and ramping flows at each remaining dam, and any agreed-upon future changes to those flows, resulting from the adaptive management program developed in the MOU, will be provided by Project Owner until the end of the current FERC license and any subsequent annual licenses. This commitment to provide bypass and ramping flows may be subject to change by FERC at the expiration of the current license term in 2026. Project Owner and Resource Agencies (subject to State and Federal laws) agree to support the continuation of such bypass and ramping flows, resulting from the adaptive management program developed in the MOU, and any agreed upon future changes to those flows, in any relicensing proceeding for FERC License No. 1121.</p> <p>The Parties agree that for the term of the license, and any subsequent annual licenses, the flows developed by the Adaptive Management Program will not be lower than those flows specified in attached Tables 1 and 2 (to be incorporated in MOU) unless agreed to by the Resource Agencies.</p>

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Screening and Laddering Requirements for N. Battle Creek Feeder, Inskip and Eagle Canyon diversions.	Diversion dams would need to be equipped with NMFS/CDFG approved "fail-safe" fish screens and ladders. The diversions would require full closure during screen failure and year-round remote sensing and inspection to monitor performance.
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Table 1. Summary of prescribed instream flow releases from dams in the anadromous reaches of the North and South forks of Battle Creek based on modeled biological optimums determined by the Battle Creek Working Group Biological Team.

Dam	Fork	Monthly Minimum Flow (cfs) To Be Released From Dam											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Keswick	North	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A	3 ^A
NBCF	North	88 ^F	88 ^F	88 ^F	67 ^F	47 ^F	47 ^F	47 ^F	47 ^F	47 ^F	47 ^F	47 ^F	88 ^F
Eagle	North	46 ^S	46 ^S	46 ^S	46 ^S	35 ^S	35 ^S	35 ^S	35 ^S	35 ^S	35 ^S	35 ^S	46 ^S
Wildcat	North	(Facility decommissioned; no instream flow requirement)											
South	South	(Facility decommissioned; no instream flow requirement)											
Inskip	South	86 ^{P1}	86 ^{P1}	86 ^{P1}	61 ^{P1}	40 ^{P1}	40 ^{P1}	40 ^{P1}	40 ^{P1}	40 ^{P1}	40 ^{P1}	40 ^{P1}	86 ^{P1}
Coleman	South	(Facility decommissioned; no instream flow requirement)											

A = Accretion flows downstream of the Keswick Dam can exceed 100% of maximum WUA for steelhead spawning in the portion of the Keswick reach available to anadromous fish and can exceed the predictive capability of the IFIM model. Accretion flows downstream of the Keswick Dam provide >90% of maximum WUA for steelhead rearing in the portion of the Keswick reach available to anadromous fish.

F = On occasion the release is not attainable due to the quantity of inflow reaching North Battle Creek Feeder Diversion. Additional inflows to the North Battle Creek Feeder reach are occasionally received from the junction box of the Volta 2 Powerhouse tailrace and Cross-County Canal a short distance downstream.

S = Eagle Canyon Dam releases reported in this table include releases from Eagle Canyon Springs (those springs located downstream of Eagle Canyon Dam that were included in the "interim flow agreement" between PG&E and USBR; USBR 1998a).

P1 = The prescribed instream flow will be the total available inflow in the South Fork upstream of the South Powerhouse at times when the available inflow is less than the prescribed flow.

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Table 2. Summary of prescribed instream flow releases from diversions in tributaries affecting the anadromous reaches of Battle Creek and tributaries based on best available information by the Battle Creek Working Group Biological Team.

Diversion	Monthly Minimum Flow (cfs) To Be Released From Tributary Diversions											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Eagle Canyon Spring	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D	All ^D
Soap Creek	(Facility decommissioned; no instream flow requirement)											
Lower Ripley Creek	(Facility decommissioned; no instream flow requirement)											
Baldwin Creek	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C	5 ^C

D = Flow from Eagle Canyon Springs enters Battle Creek in the vicinity of Eagle Canyon Dam and is included in Eagle Canyon Dam releases shown on Table 1. These Springs are limited to those that were included in the "interim flow agreement" between PG&E and USBR will be released to maximize cooling of Battle Creek.

C = The flow value reported for Baldwin Creek represents the maximum instream flow release.